

the freshwater in the upper layers and the saltwater in the lower levels (Chambers, 1994). The downstream flow of the freshwater surface layer induces an upstream flow of saltier water along the bottom (Monroe and Kelly, 1992). The point where the bottom current moving upstream exactly balances out the downstream flow is an area of zero net movement called variously the null zone, the entrapment zone or critical zone (Chadwick, 1982). This area is where suspended sediment, nutrients and plankton accumulate. High abundance of zooplankton, important food sources for larval and juvenile fishes, is associated with this zone (Chambers, 1994), making the zone and its location very important biologically to the region. During moderate outflow conditions this null zone is located in Suisun Bay or just east of the Bay. During high flow periods, the null zone moves into the Carquinez Strait or San Pablo Bay. During very low flow periods the null zone can migrate to the deeper waters of the Sacramento River (Monroe and Kelly, 1992).

Estuarine habitats in the project area depend on water flow, water depth and bottom material. The water flow varies with the season and the amount of snowpack in the Sierra Mountains. The water depth at the Marine Terminal varies from zero (at the shoreline) to 35 feet at the end of the wharf. The sediment in Suisun Bay varies from coarse sandy areas to very fine silts and clays; the actual benthic sediments at the wharf site do not appear in the literature.

The shoreline around the Marine Terminal could include any of five natural communities that are found in the area, three wetland habitats and two upland habitats (Caltrans, 1997). Four of these habitats have been identified as "significant" by the California Natural Diversity Data Base program administered by the California Department of Fish and Game. These habitats are listed below:

<b>Natural Community</b>	<b>Representative Species</b>
Northern Coastal Salt Marsh	Common pickleweed, saltgrass, alkali heath
Coastal Brackish Marsh	Alkali bulrush, California tule, Olneys bulrush
Coastal/Valley Freshwater Marsh	Common cattail, California tule, arroyo willow
Native grassland	Purple needlegrass
Non-native grassland	Wild oats, soft chess, ripgut grass Taken from Caltrans, 1997)

Of these habitats that could exist along the Marine Terminal shoreline or adjacent to it, only the "non-native grassland" is not considered significant. Surveys would have to be done to specifically identify the habitat types at the Marine Terminal.

**D. Plant Life.** Will the proposal result in:

	Potentially Significant Impact	
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